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**Intellectual Property Rights**

IPRs essential or potentially essential to the present document may have been declared to ETSI. The information pertaining to these essential IPRs, if any, is publicly available for ETSI members and non-members, and can be found in ETSI SR 000 314: "Intellectual Property Rights (IPRs): Essential, or potentially Essential, IPRs notified to ETSI in respect of ETSI standards", which is available from the ETSI Secretariat. Latest updates are available on the ETSI Web server (https://ipr.etsi.org/).

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**Foreword**

This draft Harmonised European Standard (EN) has been produced by ETSI Technical Committee Electromagnetic compatibility and Radio spectrum Matters (ERM), and is now submitted for the combined Public Enquiry and Vote phase of the ETSI standards EN Approval Procedure.

The present document has been prepared under the Commission’s standardisation request C(2015) 5376 final [i.4] to provide one voluntary means of conforming to the essential requirements of Directive 2014/53/EU on the harmonisation of the laws of the Member States relating to the making available on the market of radio equipment and repealing Directive 1999/5/EC [i.1].

Once the present document is cited in the Official Journal of the European Union under that Directive, compliance with the normative clauses of the present document given in table A.1 confers, within the limits of the scope of the present document, a presumption of conformity with the corresponding essential requirements of that Directive, and associated EFTA regulations.

The present document is part 3 of a multi-part deliverable covering VHF air-ground Digital Link (VDL) Mode 2; Technical characteristics and methods of measurement for ground-based equipment, as identified below:

- **Part 1**: "Physical layer and MAC sub-layer";
- **Part 2**: "Upper layers";
- **Part 3**: "Harmonised Standard covering the essential requirements of article 3.2 of the Directive 2014/53/EU".

<table>
<thead>
<tr>
<th>Proposed National transposition dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date of latest announcement of this EN (doa):</td>
</tr>
<tr>
<td>Date of latest publication of new National Standard or endorsement of this EN (dop/e):</td>
</tr>
<tr>
<td>Date of withdrawal of any conflicting National Standard (dow):</td>
</tr>
</tbody>
</table>

**Modal verbs terminology**

In the present document "shall", "shall not", "should", "should not", "may", "need not", "will", "will not", "can" and "cannot" are to be interpreted as described in clause 3.2 of the ETSI Drafting Rules (Verbal forms for the expression of provisions).

"must" and "must not" are **NOT** allowed in ETSI deliverables except when used in direct citation.
1 Scope

The present document applies to VDL Mode 2 ground-air digital communications using Differential Eight Phase Shift Keying (D8PSK), intended for channel increments of 25 kHz. The VDL Mode 2 system provides data communication exchanges between aircraft and ground-based systems, operating in the VHF band (117,975 MHz to 137,000 MHz). The scope of the present document is limited to ground based stations.

NOTE: The VDL Mode 2 can be used as an Air/Ground sub-network of the Aeronautical Telecommunication Network (ATN) using a band with AM(R)S spectrum allocation.

The present document contains requirements to demonstrate that "Radio equipment shall be so constructed that it both effectively uses and supports the efficient use of radio spectrum in order to avoid harmful interference" [i.1].

In addition to the present document, other ENs that specify technical requirements in respect of essential requirements under other parts of article 3 of the Directive 2014/53/EU [i.1] as well as essential requirements under the SES Interoperability Regulation No 552/2004 [i.5] and related implementing rules and/or essential requirements under the EASA basic Regulation No 216/2008 [i.6] as amended by Regulation No 1108/2009 [i.7] may apply to equipment within the scope of the present document.

2 References

2.1 Normative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the referenced document (including any amendments) applies.

Referenced documents which are not found to be publicly available in the expected location might be found at http://docbox.etsi.org/Reference.

NOTE: While any hyperlinks included in this clause were valid at the time of publication, ETSI cannot guarantee their long term validity.

The following referenced documents are necessary for the application of the present document.

[1] ETSI EN 301 841-1 (V1.4.1) (04-2015): "VHF air-ground Digital Link (VDL) Mode 2; Technical characteristics and methods of measurement for ground-based equipment; Part 1: Physical layer and MAC sub-layer".

[2] ETSI EN 300 113-1 (V1.7.1) (11-2011): "Electromagnetic compatibility and Radio spectrum Matters (ERM); Land mobile service; Radio equipment intended for the transmission of data (and/or speech) using constant or non-constant envelope modulation and having an antenna connector; Part 1: Technical characteristics and methods of measurement".

2.2 Informative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the referenced document (including any amendments) applies.

NOTE: While any hyperlinks included in this clause were valid at the time of publication, ETSI cannot guarantee their long term validity.

The following referenced documents are not necessary for the application of the present document but they assist the user with regard to a particular subject area.

[i.2] ETSI TR 100 028-1: "Electromagnetic compatibility and Radio spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics; Part 1".

[i.3] ETSI TR 100 028-2: "Electromagnetic compatibility and Radio spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics; Part 2".


3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in Directive 2014/53/EU [i.1] and the following apply:

**adjacent channel power:** amount of the modulated RF signal power transmitted outside of the assigned channel

**NOTE:** Adjacent channel power includes discrete spurious, signal sidebands, and noise density (including phase noise) at the transmitter output.

**adjacent channel rejection:** receiver's ability to demodulate the desired signal and meet the uncorrected BER requirement in the presence of an interfering signal in an adjacent channel

**NOTE:** The ratio (in dB) between the adjacent interfering signal level and the desired signal level necessary to achieve the specified minimum uncorrected BER, is the Adjacent Channel Rejection (ACR) ratio.

**Aeronautical Mobile Service (AMS):** mobile service between ground based stations and airborne stations, or between aircraft stations, in which survival craft stations may participate

**average transmitter output power:** average power supplied to the antenna transmission line by a transmitter during an interval of time sufficiently long, compared with the lowest frequency encountered in the modulation, taken under normal operating conditions

**Bit Error Rate (BER):** ratio between the number of erroneous bits received and the total number of bits received

**NOTE:** The uncorrected BER represents the BER without the benefit of Forward Error Correction (FEC).

**Co-Channel Interference (CCI):** capability of a receiver to demodulate the desired signal and achieve the minimum specified BER performance in the presence of an unwanted signal at the same assigned channel

**NOTE:** The ratio (in dB) between the wanted signal level and the unwanted signal level is the co-channel interference ratio.

**conducted measurements:** measurements which are made using a direct RF connection to the equipment under test
environmental profile: range of environmental conditions under which equipment within the scope of the present document is required to comply with the provisions of the present document

ground based station: aeronautical station equipment, in the Aeronautical Mobile Service (AMS), for use with an external antenna and intended for use at a fixed location

radiated measurements: measurements which involve the measurement of a radiated field

spurious emissions: conducted RF emissions on a frequency or frequencies which are outside the necessary bandwidth and the level of which may be reduced without affecting the corresponding transmission of information

NOTE: Spurious emissions include parasitic emissions, intermodulation products and frequency conversion products.

X 25: ITU-T standard for the protocols and message formats that define the interface between a terminal and a packet switching network

3.2 Abbreviations

For the purposes of the present document, the following abbreviations apply:

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACR</td>
<td>Adjacent Channel Rejection</td>
</tr>
<tr>
<td>AM</td>
<td>Amplitude Modulation</td>
</tr>
<tr>
<td>AM(R)S</td>
<td>Aeronautical Mobile (Route) Service</td>
</tr>
<tr>
<td>AMS</td>
<td>Aeronautical Mobile Service</td>
</tr>
<tr>
<td>ATN</td>
<td>Aeronautical Telecommunication Network</td>
</tr>
<tr>
<td>BER</td>
<td>Bit Error Rate</td>
</tr>
<tr>
<td>CCI</td>
<td>Co-Channel Interference</td>
</tr>
<tr>
<td>D8PSK</td>
<td>Differential Eight Phase Shift Keying</td>
</tr>
<tr>
<td>DSB</td>
<td>Double Side Band</td>
</tr>
<tr>
<td>EASA</td>
<td>European Aviation Safety Agency</td>
</tr>
<tr>
<td>FEC</td>
<td>Forward Error Correction</td>
</tr>
<tr>
<td>MAC</td>
<td>Medium Access Control</td>
</tr>
<tr>
<td>R&amp;TTE</td>
<td>Radio and Telecommunications Terminal Equipment</td>
</tr>
<tr>
<td>RF</td>
<td>Radio Frequency</td>
</tr>
<tr>
<td>TX</td>
<td>Transmission</td>
</tr>
<tr>
<td>VDL</td>
<td>VHF Data Link</td>
</tr>
<tr>
<td>VHF</td>
<td>Very High Frequency</td>
</tr>
<tr>
<td>VSWR</td>
<td>Voltage Standing Wave Ratio</td>
</tr>
</tbody>
</table>

4 Technical requirements specifications

4.1 Environmental profile

The technical requirements of the present document apply under the environmental profile for operation of the equipment, which shall be declared by the supplier. The equipment shall comply with all the technical requirements of the present document at all times when operating within the boundary limits of the declared operational environmental profile.
4.2 Conformance requirements

4.2.1 Transmitter requirements

4.2.1.1 Frequency error

4.2.1.1.1 Requirement
Frequency tolerance shall be as specified in ETSI EN 301 841-1 [1], clause 6.1.1.

4.2.1.1.2 Conformance
Conformance tests as defined in clause 5.3.1.1 shall be carried out with the limits defined by clause 4.2.1.1.1.

4.2.1.2 Manufacturer's declared output power

4.2.1.2.1 Requirement
Manufacturer's declared output power shall be as specified in ETSI EN 301 841-1 [1], clause 6.1.2.

4.2.1.2.2 Conformance
Conformance tests as defined in clause 5.3.1.2 shall be carried out with the limits defined by clause 4.2.1.2.1.

4.2.1.3 Adjacent channel power

4.2.1.3.1 Requirement
Adjacent channel power shall be as specified in ETSI EN 301 841-1 [1], clause 6.1.3.

4.2.1.3.2 Conformance
Conformance tests as defined in clause 5.3.1.3 shall be carried out with the limits defined by clause 4.2.1.3.1.

4.2.1.4 Conducted spurious emissions

4.2.1.4.1 Requirement
Conducted spurious emissions shall be as specified in ETSI EN 301 841-1 [1], clause 6.1.4.

4.2.1.4.2 Conformance
Conformance tests as defined in clause 5.3.1.4 shall be carried out with the limits defined by clause 4.2.1.4.1.

4.2.1.5 Cabinet radiation

4.2.1.5.1 Requirement
Cabinet radiation shall be as specified in ETSI EN 301 841-1 [1], clause 6.1.5.

4.2.1.5.2 Conformance
Conformance tests as defined in clause 5.3.1.5 shall be carried out with the limits defined by clause 4.2.1.5.1.
4.2.1.6 Void

4.2.1.7 Intermodulation attenuation

4.2.1.7.1 Requirements
Inter-modulation attenuation shall be as specified in ETSI EN 300 113-1 [2], clause 7.6.3.

If the intended use of the base station equipment is not in the special service conditions class as described in that clause, this has to be stated clearly in the user manual and/or in the installation manual.

NOTE: The required class (general - or special service conditions) depends on the local situation and regulatory frequency assignment.

4.2.1.7.2 Conformance
Conformance tests as defined in clause 5.3.1.7 shall be carried out with the limits defined by clause 4.2.1.7.1.

4.2.1.8 Void

4.2.1.9 RF power release time

4.2.1.9.1 Requirement
RF power release time shall be as specified in ETSI EN 301 841-1 [1], clause 6.1.9.

4.2.1.9.2 Conformance
Conformance tests as defined in clause 5.3.1.9 shall be carried out with the limits defined by clause 4.2.1.9.1.

4.2.1.10 Transient behaviour of the transmitter

4.2.1.10.1 Receiver to transmitter turn-around time

4.2.1.10.1.1 Requirement
Receiver to transmitter turn-around shall be as specified in ETSI EN 301 841-1 [1], clause 6.1.10.1.

4.2.1.10.1.2 Conformance
Conformance tests as defined in clause 5.3.1.10.1 shall be carried out with the limits defined by clause 4.2.1.10.1.1.

4.2.1.10.2 Transmitter to receiver turn-around time

4.2.1.10.2.1 Requirement
Transmitter to receiver turn-around shall be as specified in ETSI EN 301 841-1 [1], clause 6.1.10.2.

4.2.1.10.2.2 Conformance
Conformance tests as defined in clause 5.3.1.10.2 shall be carried out with the limits defined by clause 4.2.1.10.2.1.

4.2.1.11 Modulation Accuracy - Symbol constellation error

4.2.1.11.1 Requirement
Symbol constellation error shall be as specified in ETSI EN 301 841-1 [1], clause 6.1.11.
4.2.1.11.2 Conformance
Conformance tests as defined in clause 5.3.1.11 shall be carried out with the limits defined by clause 4.2.1.11.1.

4.2.1.12 Load VSWR capability

4.2.1.12.1 Requirement
The load VSWR capability is the ability of the transmitter to maintain the limits of wide-band noise and adjacent channel power when a 2:1 mismatch to the transmitter output terminals is applied by a length of feeder, which is varied in electrical length by up to half a wavelength. The requirement shall be as specified in ETSI EN 301 841-1 [1], clause 6.1.13.

4.2.1.12.2 Conformance
Conformance tests as defined in clause 5.3.1.12 shall be carried out with the limits defined by clause 4.2.1.12.1.

4.2.2 Receiver requirements

4.2.2.1 Sensitivity

4.2.2.1.1 Requirement
Sensitivity shall be as specified in ETSI EN 301 841-1 [1], clause 6.2.1.

4.2.2.1.2 Conformance
Conformance tests as defined in clause 5.3.2.1 shall be carried out with the limits defined by clause 4.2.2.1.1.

4.2.2.2 Co-channel interference

4.2.2.2.1 Requirement
Co-channel interference shall be as specified in ETSI EN 301 841-1 [1], clause 6.2.2.

4.2.2.2.2 Conformance
Conformance tests as defined in clause 5.3.2.2 shall be carried out with the limits defined by clause 4.2.2.2.1.

4.2.2.3 First adjacent channel rejection

4.2.2.3.1 Requirement
First adjacent channel rejection shall be as specified in ETSI EN 301 841-1 [1], clause 6.2.3.

4.2.2.3.2 Conformance
Conformance tests as defined in clause 5.3.2.3 shall be carried out with the limits defined by clause 4.2.2.3.1.

4.2.2.4 Spurious response rejection of signals within the VHF aeronautical band

4.2.2.4.1 Requirement
Rejection of signals within the VHF aeronautical band shall be as specified in ETSI EN 301 841-1 [1], clause 6.2.4.
4.2.2.4.2 Conformance
Conformance tests as defined in clause 5.3.2.4 shall be carried out with the limits defined by clause 4.2.2.4.1.

4.2.2.5 Spurious response rejection of signals outside the VHF aeronautical band

4.2.2.5.1 Requirement
Rejection of signals outside the VHF aeronautical band shall be as specified in ETSI EN 301 841-1 [1], clause 6.2.5.

4.2.2.5.2 Conformance
Conformance tests as defined in clause 5.3.2.5 shall be carried out with the limits defined by clause 4.2.2.5.1.

4.2.2.6 In-band Intermodulation response rejection

4.2.2.6.1 Requirement
In-band intermodulation shall be as specified in ETSI EN 301 841-1 [1], clause 6.2.6.

4.2.2.6.2 Conformance
Conformance tests as defined in clause 5.3.2.6 shall be carried out with the limits defined by clause 4.2.2.6.1.

4.2.2.7 Blocking or desensitization

4.2.2.7.1 Requirement
Blocking level shall be as specified in ETSI EN 300 113-1 [2], clause 8.9.3.

4.2.2.7.2 Conformance
Conformance tests as defined in clause 5.3.2.7 shall be carried out with the limits defined by clause 4.2.2.7.1.

4.2.2.8 Conducted spurious emission

4.2.2.8.1 Requirement
Conducted spurious emission shall be as specified in ETSI EN 301 841-1 [1], clause 6.2.8.

4.2.2.8.2 Conformance
Conformance tests as defined in clause 5.3.2.8 shall be carried out with the limits defined by clause 4.2.2.8.1.

4.2.2.9 Cabinet radiation

4.2.2.9.1 Requirement
Cabinet radiation requirements shall be as specified in ETSI EN 301 841-1 [1], clause 6.2.9.

4.2.2.9.2 Conformance
Conformance tests as defined in clause 5.3.2.9 shall be carried out with the limits defined by clause 4.2.2.9.1.
5 Testing for compliance with technical requirements

5.1 Environmental conditions for testing

5.1.0 General

Tests defined in the present document shall be carried out at representative points within the boundary limits of the declared operational environmental profile.

Where technical performance varies subject to environmental conditions, tests shall be carried out under a sufficient variety of environmental conditions (within the boundary limits of the declared operational environmental profile) to give confidence of compliance for the affected technical requirements.

5.1.1 Test power source

The test power source shall meet the requirements of ETSI EN 301 841-1 [1], clause 8.1.

5.1.2 Normal and extreme test conditions

Measurements shall be made under normal test conditions and also, where stated, under extreme test conditions.

The test conditions and procedures shall be as specified in ETSI EN 301 841-1 [1], clauses 8.2.

5.2 Interpretation of the measurement results

The interpretation of the results recorded in a test report for the measurements described in the present document shall be as follows:

- the measured value related to the corresponding limit will be used to decide whether an equipment meets the requirements of the present document;
- the value of the measurement uncertainty for the measurement of each parameter shall be included in the test report;
- the recorded value of the measurement uncertainty shall be, for each measurement, equal to or lower than the figures in tables 1 and 2.

For the test methods, according to the present document, the measurement uncertainty figures shall be calculated and shall correspond to an expansion factor (coverage factor) $k = 1.96$ or $k = 2$ (which provide confidence levels of respectively 95% and 95.45% in the case where the distributions characterizing the actual measurement uncertainties are normal (Gaussian)). Principles for the calculation of measurement uncertainty are contained in ETSI TR 100 028 [i.2] and [i.3], in particular in annex D of the ETSI TR 100 028-2 [i.3].

Tables 1 and 2 are based on such expansion factors.
### Table 1: Transmitter measurement uncertainty: maximum values

<table>
<thead>
<tr>
<th>Measurement uncertainties</th>
<th>Maximum values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency error</td>
<td>±1 x 10^{-9}</td>
</tr>
<tr>
<td>Carrier power (normal and extreme test conditions)</td>
<td>±0.75 dB</td>
</tr>
<tr>
<td>Adjacent channel power</td>
<td>±2.5 dB</td>
</tr>
<tr>
<td>Conducted spurious emissions:</td>
<td></td>
</tr>
<tr>
<td>below 1 GHz</td>
<td>±3 dB</td>
</tr>
<tr>
<td>between 1 GHz and 4 GHz</td>
<td>±6 dB</td>
</tr>
<tr>
<td>Cabinet radiation</td>
<td>±6 dB</td>
</tr>
<tr>
<td>Intermodulation attenuation</td>
<td>±3 dB</td>
</tr>
<tr>
<td>RF power release time</td>
<td>±20 % of the limits values</td>
</tr>
<tr>
<td>Receiver to transmitter turn-around time</td>
<td>±20 % of the limits values</td>
</tr>
<tr>
<td>Transmitter to receiver turn-around time</td>
<td>±20 % of the limits values</td>
</tr>
<tr>
<td>Modulation Accuracy - Symbol constellation error</td>
<td>±3 dB</td>
</tr>
</tbody>
</table>

### Table 2: Receiver measurement uncertainty: maximum values

<table>
<thead>
<tr>
<th>Measurement uncertainties</th>
<th>Maximum values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensitivity</td>
<td>±3 dB</td>
</tr>
<tr>
<td>Co-channel interference</td>
<td>±3 dB</td>
</tr>
<tr>
<td>First adjacent channel rejection</td>
<td>±4 dB</td>
</tr>
<tr>
<td>Spurious response rejection</td>
<td>±4 dB</td>
</tr>
<tr>
<td>Intermodulation response rejection</td>
<td>±3 dB</td>
</tr>
<tr>
<td>Blocking and desensitization</td>
<td>±4 dB</td>
</tr>
<tr>
<td>Conducted spurious emissions:</td>
<td></td>
</tr>
<tr>
<td>below 1 GHz</td>
<td>±3 dB</td>
</tr>
<tr>
<td>between 1 GHz and 4 GHz</td>
<td>±6 dB</td>
</tr>
<tr>
<td>Cabinet radiation</td>
<td>±6 dB</td>
</tr>
</tbody>
</table>

### 5.3 Conformance tests

#### 5.3.1 Transmitter test specifications

##### 5.3.1.1 Frequency error

The test procedure specified in clause 9.1.1.2 of ETSI EN 301 841-1 [1] shall be carried out.

##### 5.3.1.2 Manufacturer's declared output power

The test procedure specified in clause 9.1.2 of ETSI EN 301 841-1 [1] shall be carried out.

##### 5.3.1.3 Adjacent channel power

The test procedure specified in clauses 9.1.3.1 to 9.1.3.3 of ETSI EN 301 841-1 [1] shall be carried out.

##### 5.3.1.4 Conducted Spurious emissions

The test procedure specified in clause 9.1.4 of ETSI EN 301 841-1 [1] shall be carried out.

##### 5.3.1.5 Cabinet Radiation

The test procedure specified in clause 9.1.5 of ETSI EN 301 841-1 [1] and shall use the test procedure as defined in ETSI EN 300 113-1 [2].
5.3.1.6 Void

5.3.1.7 Inter-modulation attenuation
The test procedure specified in clause 7.6.2 of ETSI EN 300 113-1 [2] shall be carried out.

5.3.1.8 Void

5.3.1.9 RF power release time
The test procedures specified in clause 9.1.9 of ETSI EN 301 841-1 [1] shall be carried out.

5.3.1.10 Transient behaviour of the transmitter

5.3.1.10.1 Receiver to transmitter turn-around time
The test procedure specified in clause 9.1.10.1 of ETSI EN 301 841-1 [1] shall be carried out.

5.3.1.10.2 Transmitter to receiver turn-around time
The test procedure specified in clause 9.1.10.2 of ETSI EN 301 841-1 [1] shall be carried out.

5.3.1.11 Modulation accuracy - Symbol constellation error
The test procedure specified in clause 9.1.11 of ETSI EN 301 841-1 [1] shall be carried out.

5.3.1.12 Load VSWR capability
The test procedure specified in clause 9.1.13 of ETSI EN 301 841-1 [1] shall be carried out.

5.3.2 Receiver test specifications

5.3.2.1 Sensitivity
The test procedure specified in clause 9.2.1 of ETSI EN 301 841-1 [1] shall be carried out.

5.3.2.2 Co-channel interference
The test procedure specified in clause 9.2.2 of ETSI EN 301 841-1 [1] shall be carried out.

5.3.2.3 First Adjacent channel rejection
The test procedure specified in clause 9.2.3 of ETSI EN 301 841-1 [1] shall be carried out.

5.3.2.4 Spurious response rejection of signals within the VHF aeronautical band
The test procedure specified in clause 9.2.4 of ETSI EN 301 841-1 [1] shall be carried out.

5.3.2.5 Spurious response rejection of signals outside the VHF aeronautical band
The test procedure specified in clause 9.2.5 of ETSI EN 301 841-1 [1] shall be carried out.

5.3.2.6 In-band Intermodulation rejection
The test procedure specified in clause 9.2.6 of ETSI EN 301 841-1 [1] shall be carried out.
5.3.2.7 Blocking or desensitization
The test procedure specified in clause 8.9.2 of ETSI EN 300 113-1 [2] shall be carried out.

5.3.2.8 Conducted spurious emission
The test procedure specified in clause 9.2.8 of ETSI EN 301 841-1 [1] shall be carried out.

5.3.2.9 Cabinet Radiation
The test procedure specified in clause 9.2.9 of ETSI EN 301 841-1 [1] shall be carried out and shall use the test procedure as defined in ETSI EN 300 113-1 [2].
Annex A (normative):
Relationship between the present document and the essential requirements of Directive 2014/53/EU

The present document has been prepared under the Commission’s standardisation request C(2015) 5376 final [i.4] to provide one voluntary means of conforming to the essential requirements of Directive 2014/53/EU on the harmonisation of the laws of the Member States relating to the making available on the market of radio equipment and repealing Directive 1999/5/EC [i.1].

Once the present document is cited in the Official Journal of the European Union under that Directive, compliance with the normative clauses of the present document given in table A.1 confers, within the limits of the scope of the present document, a presumption of conformity with the corresponding essential requirements of that Directive and associated EFTA regulations.

Table A.1: Relationship between the present document and the essential requirements of Directive 2014/53/EU

<p>| Harmonised Standard ETSI EN 301 841-3 | The following requirements are relevant to the presumption of conformity under the article 3.2 of Directive 2014/53/EU [i.1] |
| Requirement | Requirement Conditionality |</p>
<table>
<thead>
<tr>
<th>No</th>
<th>Description</th>
<th>Reference: Clause No</th>
<th>U/C</th>
<th>Condition</th>
</tr>
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<tr>
<td>1</td>
<td>Frequency error</td>
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<tr>
<td>2</td>
<td>Carrier power</td>
<td>4.2.1.2</td>
<td>U</td>
<td></td>
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<tr>
<td>3</td>
<td>Adjacent channel power</td>
<td>4.2.1.3</td>
<td>U</td>
<td></td>
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<tr>
<td>4</td>
<td>Transmitter conducted spurious emissions</td>
<td>4.2.1.4</td>
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<td>5</td>
<td>Transmitter Cabinet radiation</td>
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<td>6</td>
<td>Intermodulation attenuation</td>
<td>4.2.1.7</td>
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<td>7</td>
<td>RF power release time</td>
<td>4.2.1.9</td>
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<td>8</td>
<td>Transient behaviour</td>
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<td>Symbol constellation error</td>
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<td>Load VSWR capability</td>
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<td>Co-channel interference</td>
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<td>First Adjacent channel rejection</td>
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<td>Spurious response rejection</td>
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<td>16</td>
<td>Blocking or desensitization</td>
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<td>17</td>
<td>Receiver conducted spurious emissions</td>
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<td>18</td>
<td>Receiver Cabinet radiation</td>
<td>4.2.2.8</td>
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</table>

Key to columns:

**Requirement:**

- **No**: A unique identifier for one row of the table which may be used to identify a requirement.
- **Description**: A textual reference to the requirement.
- **Clause Number**: Identification of clause(s) defining the requirement in the present document unless another document is referenced explicitly.

**Requirement Conditionality:**

- **U/C**: Indicates whether the requirement shall be unconditionally applicable (U) or is conditional upon the manufacturers claimed functionality of the equipment (C).
**Condition**

Explains the conditions when the requirement shall or shall not be applicable for a requirement which is classified "conditional".

Presumption of conformity stays valid only as long as a reference to the present document is maintained in the list published in the Official Journal of the European Union. Users of the present document should consult frequently the latest list published in the Official Journal of the European Union.

Other Union legislation may be applicable to the product(s) falling within the scope of the present document.
Annex B (informative):
Bibliography


- ICAO annex 10 volume V (July 2001, including amendments up to amendment 86): "Aeronautical Radio Frequency Spectrum Utilization".


## History

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